WHAT IS CLAIMED IS:

1. A system for operating an optical transponder, which executes maintenance of a signal in the optical transponder having a digital wrapper in an optical transmission system including a plurality of layers, the system comprising:

a digital wrapper interrupt processor for processing an interrupt signal generated from the digital wrapper according to monitoring of a received signal;

a defect and maintenance signal detector for determining whether or not the received signal has a defect and determining whether or not the received signal requires maintenance under the control of the digital wrapper interrupt processor;

a defect and maintenance signal processor for, when a defect is detected by the defect and maintenance signal detector or is cancelled, processing the defect; and

a digital wrapper controller for controlling the digital wrapper according to the processing result of the defect and maintenance signal processor.

2. The system for operating an optical transponder as claimed in claim 1, wherein, when the digital wrapper interrupt processor detects an interrupt with respect to the received signal from the digital wrapper and determines that the received signal has a defect, the digital wrapper interrupt processor calls the defect and maintenance signal detector to allow it to detect the defect.

3. The system for operating an optical transponder as claimed in claim

1, wherein the digital wrapper interrupt processor sets a defect mask for each layer and processes an interrupt of each layer when the defect mask therefor is true.

4. The system for operating an optical transponder as claimed in claim 1, wherein a signal that is received and transmitted by the optical transponder has a structure that maps a client signal to a payload and includes an error correction code and an overhead.

5. The system for operating an optical transponder as claimed in claim 4, further comprising:

a transmitter information providing part for providing information required to be delivered to a receiving side through the overhead of the transmitted signal; and

a receiver information providing part for providing an expected value of information required to be received through the overhead.

6. The system for operating an optical transponder as claimed in claim 1, further comprising:

a remote information display for displaying presence/absence of a defect and the quantity of BIP-errors according to the result of the defect and maintenance signal processor;

. a defect correlation reporting part for finding the cause of the defect to report it; and

a performance monitoring part for monitoring a performance value of the received signal to report it.

7. A method for operating an optical transponder, which performs maintenance of a signal in the optical transponder having a digital wrapper in an optical transmission system including multiple layers, the method comprising:

(a) calling a processor for processing an interrupt when the interrupt is generated from the digital wrapper according to monitoring of a received signal;

(b) the called processor detecting what defect is generated in the received signal and detecting whether or not the received signal requires maintenance;

(c) performing defect processing in the case that a defect is detected at (b) or is cancelled; and

(d) controlling the digital wrapper according to the defect and maintenance processing result.

8. The method for operating an optical transponder as claimed in claim 7, wherein (a) comprises: setting a defect mask for each layer and processing an interrupt of each layer when the defect mask therefor is true.

9. The method for operating an optical transponder as claimed in claim 8, wherein, in the case that a defect of an OCH channel is detected/cancelled, (b) comprises: processing the defect mask of another layer to be false so as to

ignore processing of a generated interrupt.

10. The method for operating an optical transponder as claimed in claim 7, further comprising:

5   displaying presence/absence of a defect and the quantity of BIP-errors;

finding the cause of the defect to report it; and

monitoring a performance value of the received signal to report it.